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EXAMINER	
LEFF, STEVEN N	

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1761	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/761,008	BAKER ET AL.	
	Examiner	Art Unit	
	Steven Leff	1761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 January 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/28/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

The informal drawings are not of sufficient quality to permit examination. Accordingly, replacement drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to this Office action. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action.

Applicant is given a TWO MONTH time period to submit new drawings in compliance with 37 CFR 1.81. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a). Failure to timely submit replacement drawing sheets will result in ABANDONMENT of the application.

New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because they are not formal. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- Claims 1-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
    - Claims 1, 27, and 31 are rejected due to the phrase "providing a consistency-maintaining food product having a gravity flow ability of about 50% or more in 24 hours" as the metes and bounds of the claims are unattainable due to the parameters being undefined. For example, it is unclear at what temperature the food product is stored during the 24 hour time period, i.e. room temperature, in a heated environment, or in a cooled or frozen environment.

- Claim 13 is rejected due to the phrase "under ejection conditions" as it is unclear if the ejection conditions are with respect to the substrate, the ink, or both.
- The phrase "substantially insoluble" in claim 18 is rejected, as it is a relative term, which renders the claim indefinite. The term "substantially insoluble" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear as to what is encompassed by the phrase "substantially insoluble"; it is unclear as to what degree of difference is encompassed by this phrase, if "soluble.
- Claims 32 is rejected due to the phrase "free-flowing" as the metes and bounds of the claim is unattainable due to the parameters being undefined. For example, in the case of ice cream, it is unclear at what temperature the food product is stored, i.e. room temperature, in a heated environment, or in a cooled or frozen environment.
- Claims 26, 27, 31, and 33-34 are rejected due to the phrase "an image bleed of about 10 or less" as the metes and bounds of the claims are unattainable due to the parameters being undefined with regard to the composition and density of the substrate and/or ink, as well as the temperature of the ink and substrate at the time of printing.
- Claim 32 is indefinite due to the phrase "free flowing". It is unclear as to what extent, or viscosity range "free flowing" is meant to represent. For instance, water and glue could both be viewed as "free flowing"; however they flow differently.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

- Claims 1-8, 10-12, 15-16, and 19-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willcocks et al. (WO 01/94116) in view of Young (6536345).

With regards to claims 1-8, 10-12, 13, 15-16, and 19-36 Willcocks et al. teach a method for printing high-resolution images on an edible substrate. The printing of the image on the edible substrate is accomplished with the use of a drop on demand ink-jet printer that uses food grade ink and is capable of obtaining resolution of greater than 200 dpi. (pg. 6 line 21+) Willcocks et al. further disclose that the edible substrate may be chocolate, or ice cream (pg. 20 lines 9+) and that the image quality and resolution is dependant upon the surface chemistry of the ink and the edible substrate. (pg. 22 line 12+) "Other embodiments according to the invention which can have advantageous effect on image quality include, controlling the surface energy of the chocolate by changing the temperature of the substrate of the ink." (pg. 22 line 12+)

Willcocks et al. further teach that the ink is "water based", (pg. 26 line 10+) or the ink composition may also be substantially "free of water". (pg. 28 line 20+) Willcocks et al. further teach that the compatibility of the ink with the surface of the edible substrate is critical (pg. 21 line 1+) and that "temperature modulation of the ink cartridge can also be used to advantageously modify or control ink rheology to maximize printing performance." (pg. 22 line 29+) An alcohol may be added to the ink composition as part of the carrier so that the image will dry quickly once printed, (pg. 28 line 24+) and additionally dyes may be present. (pg. 31 line 4+) The image is finally treated by "drying or fixing the image after the printing step." (clm. 20)

With regard to the handling of the product once the image has been applied, Willcocks et al. teach using a computer system to manage and coordinate the rapid fulfillment of the customer order. The fulfillment of the orders, or turnaround time, may be on an as-you-wait basis or the customer may return for it at later time (pg. 17 line 13+). Willcocks et al. however is silent to the specific "gravity flowability" in a 24-hour period.

Young teaches an apparatus and a method of printing on edible substrates. More specifically Young teaches high resolution printing e.g. 360x260 dots per square inch (col. 6 line 1+) on edible substrates of various viscosities, such as, boiled sugar, ice cream and water (col. 6 line 6+).

Therefore with respect to claim 1, although Willcocks et al. does teach the limitation "providing a consistency-maintaining food product having a gravity flow ability of about 50% or more in 24 hours", with respect to ice cream stored at room temperature after the 24-hour elapsed time period, Willcocks et al. is silent to printing directly on a substrate which is flow able at the time of printing. However, Young not only teaches high-resolution printing on edible substrates such as ice cream, as is also taught by Willcocks et al., but Young further teaches printing on water, and boiled sugar. Therefore Young specifically teaches printing on edible substrates, where the viscosity of the edible substrate can range from solid at room temperature or highly viscous, all the way to a minimally viscous substrate, such as water. Therefore one of ordinary skill in the art at the time of the invention by the applicant would have been motivated to combine the teachings of Willcocks et al. and Young in order to provide decorated edible substrates of different viscosities thus producing an edible substrate which would be more appealing to a larger group of people, in particular children, due to its increased aesthetic appeal. Further, the inventive aspect of the applicants invention, high resolution printing on edible substrates is taught by Willcocks et al., where the specific edible substrate which is to be printed on is merely a consumers choice which is recognized in the art as is taught by Young and evidenced by the fact that Young prints high resolution pictures on such a wide variety of edible substrates with different viscosities. One of ordinary skill would have further been motivated to adjust the specific working parameters, as addressed above, for the purpose of producing a high resolution image on an edible substrate of the consumer's choice. For example regarding claims 23 and 35, which teach that the food product is a coffee drink, the coffee drink could be conventional hot coffee, or the coffee drink could be a frozen coffee drink, where the difference is the viscosity of the two coffee drinks.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Willcocks et al. and Young adjust the specific working parameters, as addressed above, for the purpose of producing a high resolution image on an edible substrate of the consumer's choice, and to further teach a method of printing which is capable of not only printing on viscous substrates but further on minimally viscous substrates due to the fact that the provision of providing an image on an edible substrate is a desirable feature, which would further enhance the substrate's overall appearance thereby further increasing sales.

With respect to claims 1, 7, 27, and 31 although Willcocks et al do not teach a specific drop volume, Willcocks et al. does teach the use of a drop on demand ink jet printer for producing

images on edible substrates where the resolution of the image should be greater than 200 dpi, where Willcocks et al. specifically teach a resolution of up to 1200 dpi. Therefore, since the referenced printing means and resolution meet those of the instant claims, and due to the fact that resolution is a direct result of drop size, it would be expected that the drop volume would meet the limitations of the instant claims, absent any clear and convincing evidence and/or arguments to the contrary. Further the patent office does not possess the facilities to test the claimed invention and those of the reference. The Office action has set forth a prima facie case of obviousness, and thus the burden shifts to applicant to demonstrate otherwise. Thus the claimed invention is obvious over the reference and therefore it would be expected that the drop volume of the edible media would meet the limitations of the claims, absent any clear and convincing evidence or arguments to the contrary.

With regard to claims 2-4 and 29-30 although Willcocks et al. do not disclose specifically treating the ice cream by cooling and/or freezing to a specific temperature, Willcocks et al. do teach that the image is treated by "drying or fixing the image after the printing step", (clm. 20) and further disclose the use of ice cream as the edible substrate (pg. 20 lines 9+). Since the reference states that the edible substrate is ice cream and that the edible substrate is treated by "fixing the image after the printing step", it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom." (see MPEP 2144.01) In the instant case, one of ordinary skill in the art would view that the "fixing step" could be meant to represent cooling or freezing to a specific temperature in order to keep the ice cream from melting.

With respect to claims 5, 28, and 29 although Willcocks et al. do not specifically state how or when the edible substrate is packaged, Willcocks et al. does teach using a computer system to manage and coordinate the rapid fulfillment of the customer order. The fulfillment of the orders, or turnaround time, may be on an as-you-wait basis or the customer may return for it at later time. (pg. 17 line 13+) One of ordinary skill in the art would have been motivated to contain the edible substrate in a container after the application of the image for shipping and/or transporting purposes in order to protect the edible substrate from the environment. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to have provided a container for protecting the edible substrate after the image has been applied for packaging purposes.

Specifically regarding claim 12, Willcocks et al. the addition of a surfactant in order to affect the image quality by increasing the density or viscosity of the ink. The altering of the ink using difference components, as well as different percentages thereof would subsequently alter the viscosity of the ink.

With regard to claims 26, 31, 33, and 34 Willcocks et al. do not teach a value in terms of the amount of image bleed, which directly affects the resolution of the image. The degree that an image bleeds is dependant upon different factors, such as the surface characteristics of the substrate and the media used, as well as the amount of time it takes the image to dry after being applied. In addition, Willcocks et al. teach an ink composition, which includes alcohol for its art recognized and applicant's intended function of reducing the bleed of the ink once applied to the substrate. One of ordinary skill in the art would have been motivated to recite an image bleed value in order to ensure that the desired image resolution is achieved. However, Willcocks et al. teach the addition of alcohol to the media composition as part of the carrier so that the image will dry quickly once printed, (pg. 28 line 24+) and further teach an image resolution of 200 dpi after the image has been applied to the edible substrate using an ink jet printer. Therefore since Willcocks et al. teach that alcohol may be included in the media for its art recognized and applicant's intended function of achieving a desired resolution, and since the referenced method and materials meet those of the instant claims, it would be expected that the resulting product, an edible substrate with an image applied, would thus meet the limitations of the claims, absent any clear and convincing evidence and/or arguments to the contrary.

- Claims 9, 13, 14, and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willcocks et al. (WO 01/94116) in view of Young (6536345) and further in view of Baker et al. (5938826).

  Willcocks et al. are taken as above.

  Young et al. is taken as above.

  Baker et al. teaches applying marks to "food products" (col. 5 line 22) using "hot melt inks which are solid at room temperature and liquid at temperatures above room temperature. Hot melt inks can be used, for example, in ink jet printing. During ink jet printing, the ink is heated so that it becomes liquid, and then is ejected through a print head onto a substrate. The ink then solidifies on the substrate." (col. 1 lines 5+) The ink has a targeted melt viscosity of about 5 to

100 centipoise, (col. 3 line 10+) an auto-dispersing or a non-dispersible wax (clms. 1 and 10) and is ejected by activation of the PZT (piezoelelectric transducer). (col. 5 line 9+)

With respect to claims 9, 13, 14, and 17-18, Willcocks et al do not teach the use of a piezoelectric ink jet printer, and further does not teach the use of an ejection media which has a viscosity of about 70-100 cps. at room temperature, or 8-20 cps. under ejection conditions. However, since the provision of providing an image on an edible substrate is a desirable feature, which would further enhance the substrate's overall appearance, one of ordinary skill in the art would have been motivated to combine the teaching of Willcocks et al., Young, and Baker et al. in order to produce an edible substrate with an image using a piezoelelectric ink jet printer, thus further automating the method and producing a more resolute image. The selection and use of a particular printer known in the art would not have involved an inventive step and therefore would have been obvious to one of ordinary skill in the art to utilize, based upon the ink composition, the desired image and substrate utilized. Further, it would have been obvious to one of ordinary skill in the art to use a wax in the composition of the media as is specifically taught by Baker, in order to increase the viscosity of the media to it's operational range and thus subsequently increase the number of edible substrates that the image can be applied to.

Therefore with respect to claims 9, 13, 14, and 17-18, it would have been obvious to one of ordinary skill in the art at the time of the invention by the applicant to have produced a substrate with an image that was applied through the use of a piezoelectric ink jet printing in order to provide a more resolute image with respect to the substrate and other parameters.

Allowable Subject Matter

There is no allowable subject matter at this time

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Leff whose telephone number is (571) 272-6527. The examiner can normally be reached on Mon-Fri 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keith Hendricks can be reached on (571) 272-1401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SL

KEITH HENDRICKS
PRIMARY EXAMINER